

REMARKS/ARGUMENTS

Reconsideration and withdrawal of the rejections of the application and consideration and entry of this paper are respectfully requested in view of the herein remarks, which place the application in condition for allowance.

The instant After-Final Amendment is being made to facilitate prosecution of the application and does not require a further search. Therefore, Applicant's attorneys respectfully request that the instant Amendment be entered.

I. STATUS OF THE CLAIMS AND FORMAL MATTERS

Claims 1, 2, 5, and 6 are currently pending. Claims _____ are independent. Claim 1 is hereby amended. No new matter has been introduced. Support for this amendment is provided throughout the Specification as originally filed.

II. REJECTIONS UNDER 35 U.S.C. §102

Claims 1, 2, 5, and 6 were rejected under 35 U.S.C. §102 as allegedly anticipated by U.S. Patent No. 6,258,139 to Jensen ("Jensen"). Applicants respectfully traverse the rejection for at least the following reasons.

Independent claim 1 recites, *inter alia*:

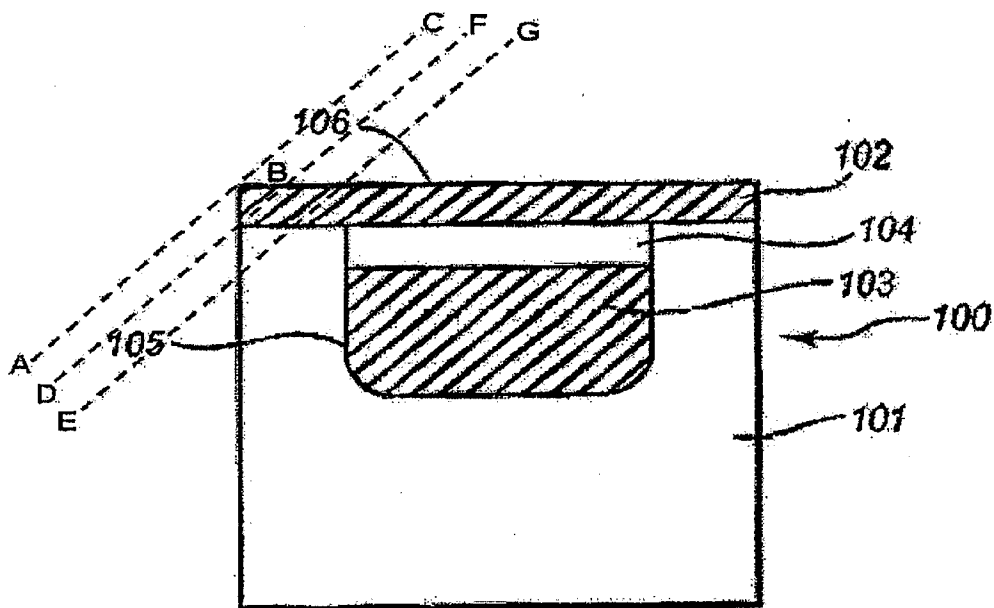
A tool insert comprising:
a substrate having a support surface and a support ring extending laterally from the support surface, the support ring being sized to define a recess within the confines thereof and a shelf about the periphery thereof...;
a layer of ultra-hard abrasive material located within the recess and bonded to the substrate and the support ring, the layer of ultra-hard abrasive material having a top surface, a portion of the periphery of the top surface providing a primary cutting edge for the tool insert; and

a protective layer bonded to the shelf about the support ring so as to protect the primary cutting edge, a periphery of the protective layer providing a secondary cutting edge for the tool insert.... (Emphasis added.)

Accordingly, an ultra-hard abrasive within the recess if the claimed tool insert provides a primary cutting edge. The primary cutting edge is protected by a protective layer, the periphery of which provides a secondary cutting edge for cutting a first substance.

The Office Action identifies, on page 2, the protective layer as diamond layer 202, 207 and abrasive material 204,203 in the recess as providing a primary cutting edge. In addressing Applicants' arguments, the Office Action asserts "The claim does not require the "primary cutting edge" to be located on the distal end of the substrate nor initially contact any work material. The prior art diamond core is located on a portion of the top surface of the substrate and protected by the diamond layer." Therefore, as identified by the Examiner, the primary cutting edge is provided by the diamond core. Applicants respectfully disagree with the characterization of the core as providing the primary cutting edge.

As one of ordinary skill in the art will of diamond compacts (PCDs) would recognize, the primary cutting edge must, by definition, be responsible for the primary removal of material in the application. As would also be recognized by one skilled in the art, the geometry of application of PCD cutter is such that they are worn, not parallel to the upper planar surface, but at some angle to it. In the figure below corresponding to Fig. 1 of Jensen, tool wear would occur as indicated by the series of dashed lines AC, DF, and EG added to the figure for illustration purposes. Line AC indicates initial wear, EG indicates wear after the tool has been used for some time, and DF indicates wear at some intermediate point. In use, the upper surface or leading edge, indicated by point B on line DF, encounters the work piece first, with the trailing



edge extending towards, and later into, the substrate (101) as the cutter wears, indicated by line EG. Hence, the diamond layer 102 of Jensen remains as the cutting edge for the entire useful life of the cutter. Surface 102 encounters the workpiece first and receives the greatest load from the drill bit.

Jensen explicitly describes the core as “providing additional cutting life of the PDC” as both the diamond surface region 202 and the carbide 201,204 wear away. *Jensen*, column 6, lines 8-11. Because the core provides “additional cutting life,” the primary cutting life is provided by diamond surface 102. Thus surface 202 would be recognized by one skilled in the art to be the primary cutting edge.

One of ordinary skill in the art would recognize that the primary cutting edge of a PCD would, implicitly, be located on the distal end of substrate comprising a tool insert. The primary cutting edge, as indicated above, is the edge designed and positioned to provide the primary removal of the work piece. It would be recognized by those of ordinary skill in the art as the upper exposed edge of the cutter, as shown in all of the Jensen figures as well as in Figs. 1

and 2 of the pending application. It would be clearly understood that PCD region 103 in Fig. 1 of Jensen cannot provide a primary cutting edge, but only a secondary cutting edge.

Consequently, Jensen does not disclose “a layer of ultra-hard abrasive material located within the recess and...having a top surface, **a portion of the periphery of the top surface providing a primary cutting edge for the tool insert; and a protective layer...to protect the primary cutting edge, a periphery of the protective layer providing a secondary cutting edge**” as required by independent claim 1.

For at least the foregoing reasons, because Jensen fails to disclose at least a tool insert with a layer of ultra-hard abrasive material having a top surface, a portion of the periphery of the top surface providing a primary cutting edge for the tool insert; and a protective layer...to protect the primary cutting edge, a periphery of the protective layer providing a secondary cutting edge, Applicants respectfully submit that independent claim 1 patentably distinguishes over Jensen and is therefore allowable. Further, claims 2, 5, and 6 which depend from claim 1 are allowable as well.

Statements appearing above with respect to the disclosures in the cited references represent the present opinions of the Applicant's undersigned attorney and, in the event that the Examiner disagrees with any such opinions, it is respectfully requested that the Examiner specifically indicate those portions of the respective reference providing the basis for a contrary view.

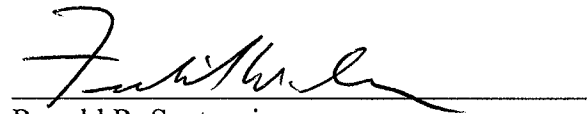
CONCLUSION

In view of the foregoing, Applicant believes that all of the claims in this application are patentable over the prior art, and an early and favorable consideration thereof is solicited.

Please charge any fees incurred by reason of this response and not paid herewith to
Deposit Account No. 50-0320.

Respectfully submitted,
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